On-Demand Processing Drill-Down

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Overview

On Demand Processing

- Processing initiated by the Data Server
- Occurs in Processing Strings
- Transparent to Data Server client
- Used to produce “standard” products
- Used to produce “one-time” products
- More details in DID 305, Volume 24 and Volume 26

ECS Context

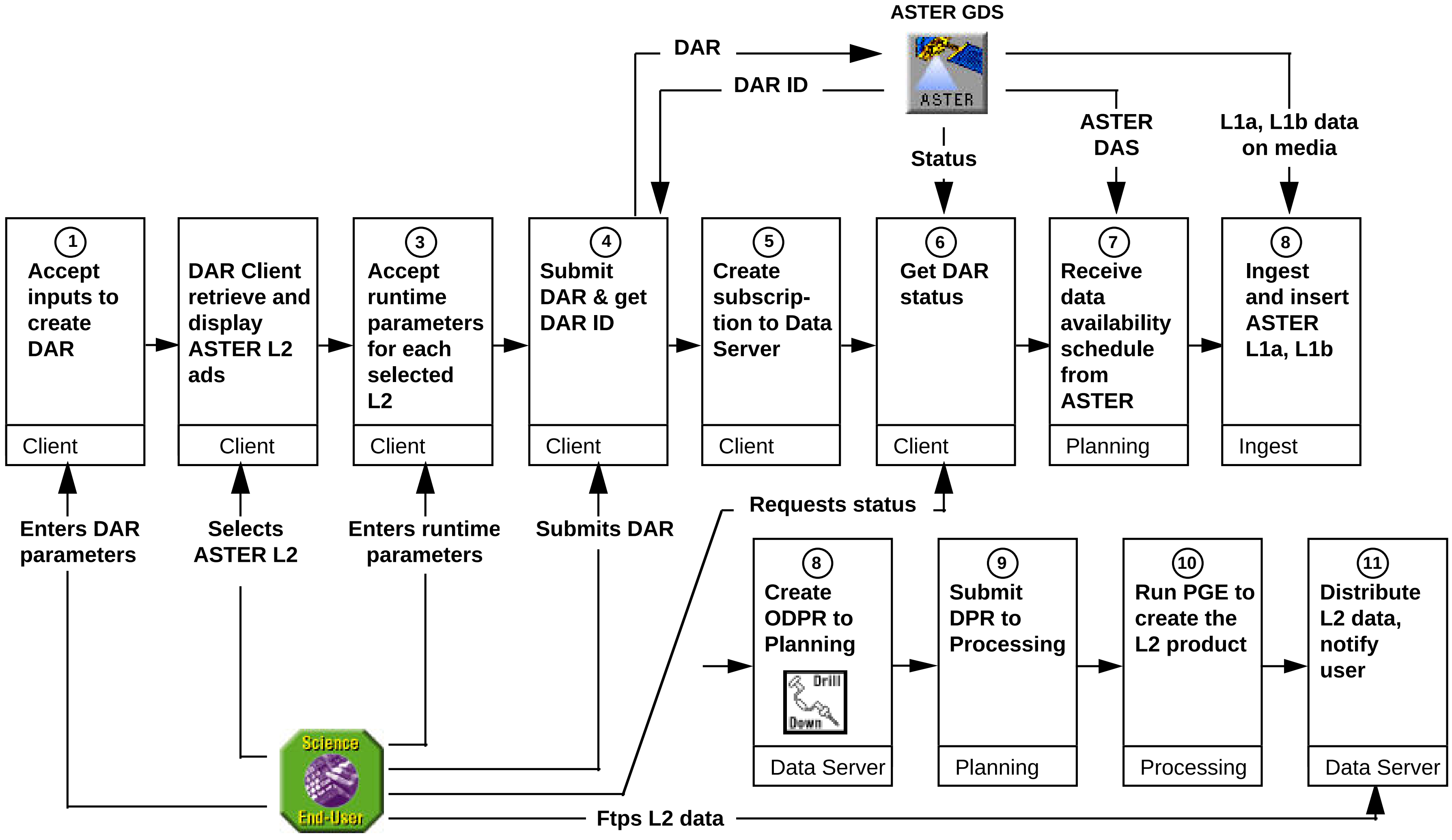
- Data Server Subsystem
- Planning Subsystem
- Processing Subsystem

Scenario Context

- Pull
  - DAR

DAR Scenario

Functional Flow



ASTER GDS

DAR

DAR ID

Status

ASTER DAS

L1a, L1b data on media

1 Accept inputs to create DAR — Client

DAR Client retrieve and display ASTER L2 ads — Client

3 Accept runtime parameters for each selected L2 — Client

4 Submit DAR & get DAR ID — Client

5 Create subscription to Data Server — Client

6 Get DAR status — Client

7 Receive data availability schedule from ASTER — Planning

8 Ingest and insert ASTER L1a, L1b — Ingest

Enters DAR parameters

Selects ASTER L2

Enters runtime parameters

Submits DAR

Requests status

8 Create ODPR to Planning — Data Server

9 Submit DPR to Processing — Planning

10 Run PGE to create the L2 product — Processing

11 Distribute L2 data, notify user — Data Server

Ftps L2 data

Design Drivers

Architectural Drivers

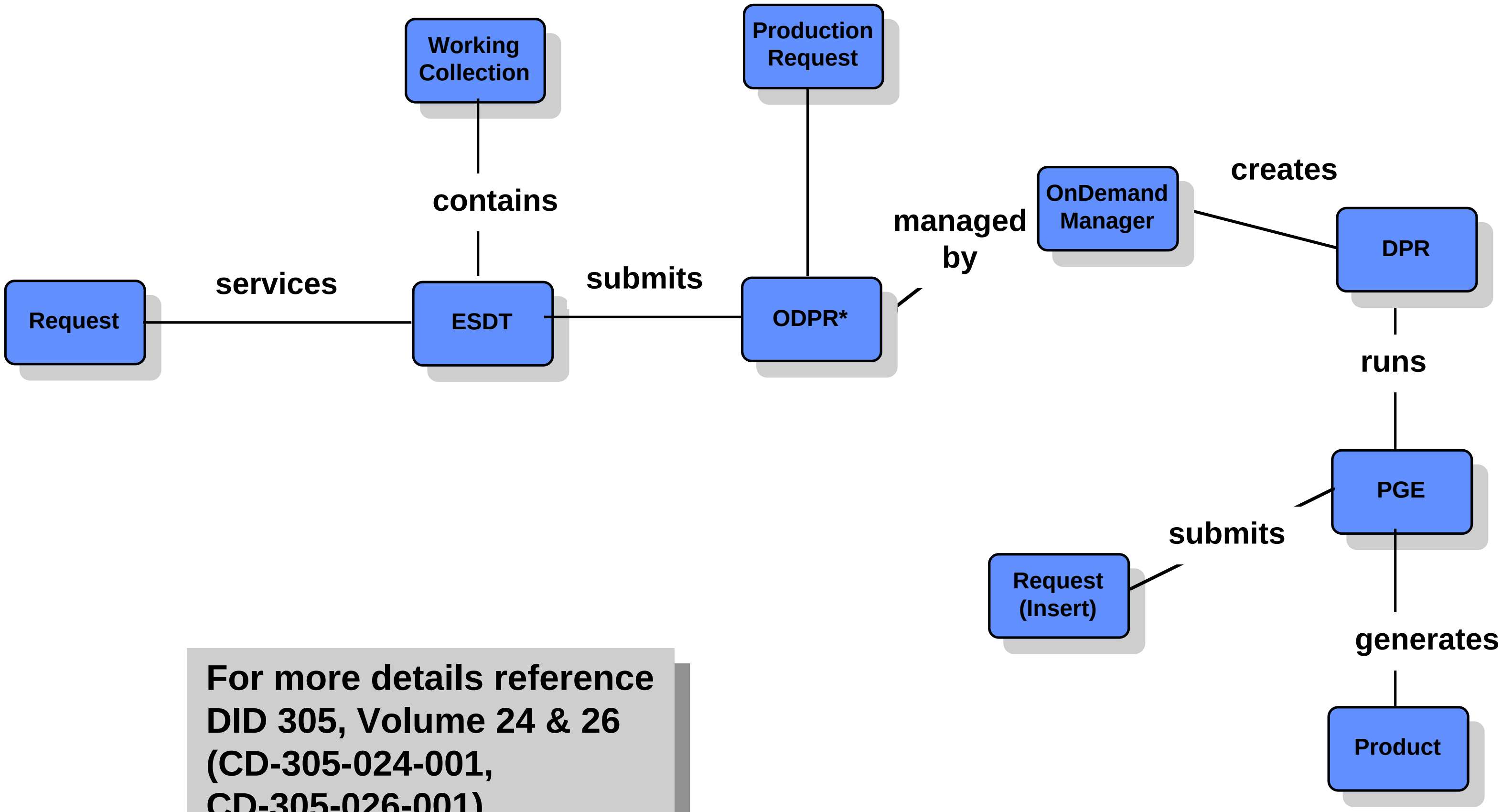
- Support balance of process vs. storage
- Support for Compute Intensive Post-Retrieval Processing
- Support for products that are naturally produced On-Demand

New Release B features

- Entirely new for Release B

Software Design

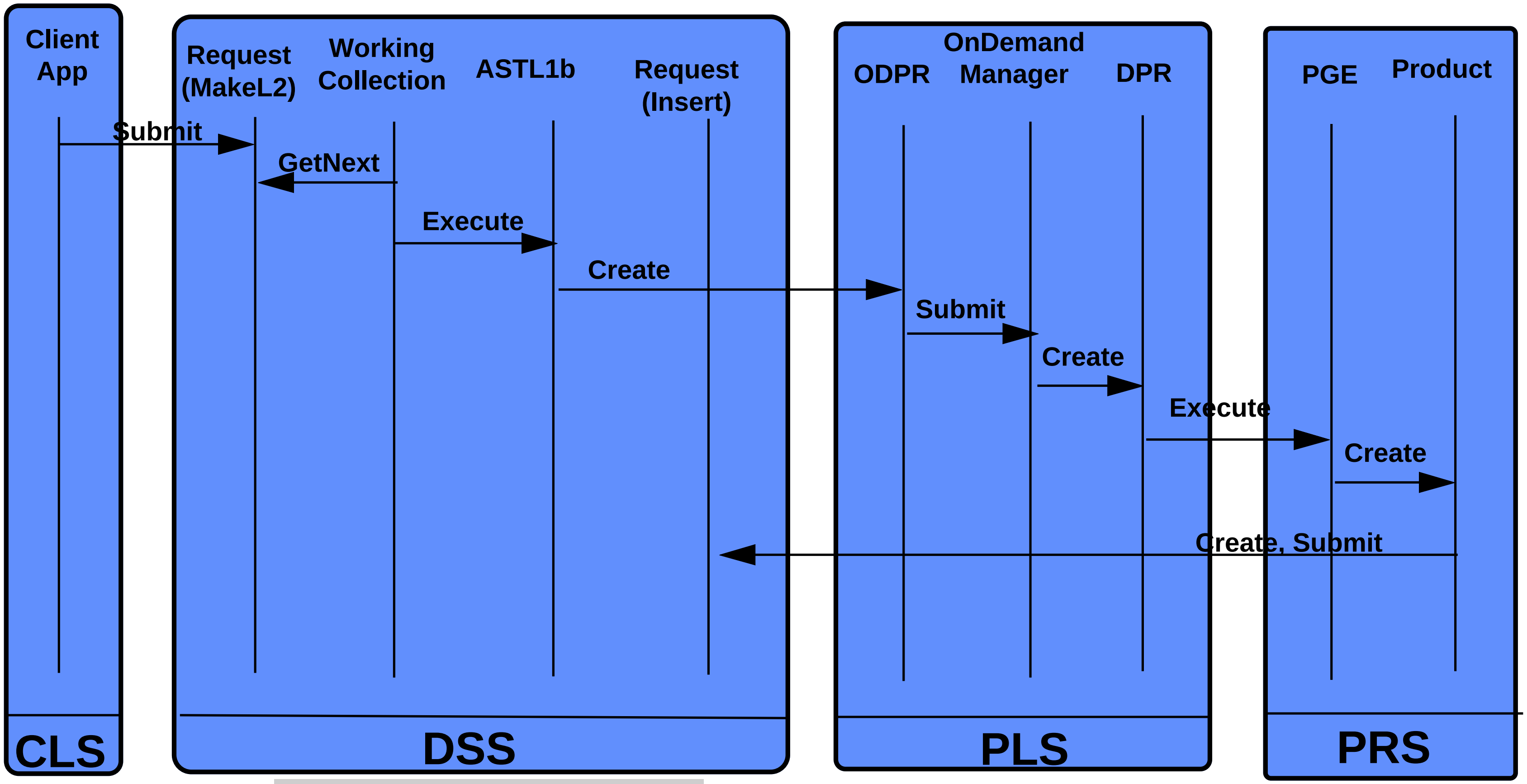
High Level Class Model



For more details reference DID 305, Volume 24 & 26 (CD-305-024-001, CD-305-026-001)

* On Demand Processing Request

Software Design
High Level Event Trace



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Evolutionary Features

Scalability

- Processing Requests can be Distributed Over Processing Strings
- System can Virtualize Custom Products to Allow for Larger User Exposure Without Increased Storage Needs

Current Status

Prototypes

- Update Virtual Metadata Study

Next Steps

- “Finalize” ASF Requirements and Refine the Design
- Analyze planning implications with regards to “nested” product dependencies
- Analyze impact of run-time parameters:
  - How will the client prompt for germane values
  - How/can we reflect run-time parameters in Virtual Metadata

Summary

On Demand Processing Highlights

- Transparent to the User
- Implemented at the Data Type Service
- Directly Supports Production vs. Store